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ABSTRACT

The kind of data useful to a statewide planning agency is considered, with focus on Illinois, and attention is directed to the use of these data once generated, including resulting problems. Illinois is currently engaged in the conceptual design of a computerized management information system that will contain as a subset the State Level Information Base (SLIB) being developed under the auspices of the National Center for Higher Education Management Systems. A review of the planning agency's statutory responsibilities is the first step in the design of an information system. The statute will specify the areas of involvement for a planning agency, such as program review and approval, which prescribes the types of information that must be available in the information and indicates what issues the agency is likely to confront. Before designing the information system, it is necessary to attempt to determine what directions higher education will be taking. A 10-year master plan by the Illinois Board of Education concerns enrollment planning; student access; faculty and staff resources; program planning, review, and evaluation; operational funding; and facilities, space, and capital planning. An information system must also address routine needs--such as budget preparation, program approval, and institutional reports--and the data must be collected according to agreed upon definitions and procedures so that adversaries cannot argue that the data are bad, and that an effective spokesperson can interpret the results in terms that the policy maker can understand. (SW)

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DESIGNING A STATE LEVEL INFORMATION SYSTEMS

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DESIGNING A STATE LEVEL INFORMATION SYSTEMS[1]

In Illinois, we are currently engaged in the conceptual design of a computerized management information system which will contain as a subset the State Level Information Base (SLIB) being developed under the auspices of NCHEMS. Concurrently, we are nearing completion of a two-year planning process in which we have attempted to identify the needs and issues of the future. These two developments converge naturally since our ability to respond effectively to needs and issues in the future will be dependent in large part upon the availability of the right kinds of data.

I would like to speak to you today about the kind of data that can be of use to a statewide planning agency. I will direct my remarks toward the needs in Illinois, which will be both similar and different from needs elsewhere. I would also like to talk

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[1] Remarks by James M. Furman, Executive Director, Illinois Board of Higher Education, Statewide Planning Seminar, sponsored by the Education Commission of the States/Inservice Education Program and The National Center for Higher Education Managements Systems, December 1-2, 1975, Denver, Colorado.

BRIEFLY ABOUT THE USE OF THESE DATA ONCE GENERATED AND SOME OF THE PERCEIVED PROBLEMS IN THE USE OF DATA.

A QUESTION OFTEN ASKED IS: HOW DOES ONE DETERMINE WHAT INFORMATION IS COLLECTED AT THE STATE LEVEL? MY RESPONSE IS THAT THERE ARE TWO INFLUENCES ON THIS DECISION. ONE RELATES TO THE RESPONSIBILITIES AND AUTHORITY OF THE AGENCY OR GROUP WHICH WILL UTILIZE THE DATA. THE OTHER RELATES TO THE PERCEIVED ISSUES TOWARD WHICH THE DATA RELATE. REGARDING THIS SECOND POINT, I WOULD EMPHASIZE THAT AN EFFECTIVE INFORMATION SYSTEM RELATES AS MUCH TO FUTURE ISSUES AS THEY CAN BE FORSEEN AS IT DOES TO THE NEED FOR HISTORICAL DATA.

IT IS NECESSARY TO START THE DESIGN OF AN INFORMATION SYSTEM FROM A REVIEW OF THE PLANNING AGENCY'S STATUTORY RESPONSIBILITIES. CLEARLY, THE STATUTE WILL PRESCRIBE REQUIREMENTS AND LIMITS. FOR EXAMPLE, THE REQUIREMENTS FOR THE ILLINOIS COMMUNITY COLLEGE BOARD MANAGEMENT INFORMATION SYSTEM IS MUCH MORE DETAILED THAN THAT REQUIRED BY THE ILLINOIS BOARD OF HIGHER EDUCATION. THE ILLINOIS COMMUNITY COLLEGE BOARD MUST APPROVE EACH COURSE THAT IS OFFERED AT A COMMUNITY COLLEGE AND CERTIFY FISCAL ALLOCATIONS OF THIS BASIS. THE ILLINOIS BOARD OF

HIGHER EDUCATION, ON THE OTHER HAND, APPROVES ACADEMIC PROGRAMS, BUT DOES NOT BECOME INVOLVED WITH FISCAL ALLOCATIONS FOR THE COMMUNITY COLLEGES. CONSEQUENTLY, THE REQUIREMENTS FOR INFORMATION OF THE TWO AGENCIES ARE DIFFERENT.

THE STATUTE WILL ALSO SPECIFY THE AREAS OF INVOLVEMENT FOR A PLANNING AGENCY--SUCH AS BUDGET REVIEW AND RECOMMENDATION, PROGRAM REVIEW AND APPROVAL, ESTABLISHING TUITION LEVELS AND ADMISSION REQUIREMENTS. THIS PRESCRIBES THE TYPES OF INFORMATION THAT MUST BE AVAILABLE IN THE INFORMATION SYSTEM. BUT FURTHER, IT INDICATES WHAT ISSUES THE AGENCY IS LIKELY TO CONFRONT. FOR EXAMPLE, TUITION AND STUDENT COST APPROVAL IMPLIES THE INVESTIGATION OF STUDENT ACCESS. THIS, IN TURN, CAUSES REQUIREMENTS FOR STUDENT DATA ELEMENTS SUCH AS ETHNIC CLASSIFICATION, FAMILY INCOME, AND RESIDENCE.

CONSEQUENTLY, I WOULD MAINTAIN THAT THERE IS NOT A MINIMUM SET OF INFORMATION THAT <u>ALL</u> AGENCIES WOULD USE IN PERFORMING THEIR REQUIRED FUNCTIONS. RATHER, THERE IS PROBABLY A MINIMUM SET OF INFORMATION WHICH IS REQUIRED TO ADEQUATELY PERFORM A FUNCTION OR ADDRESS AN ISSUE. AS EACH STATE AGENCY IS RESPONSIBLE FOR PERFORMING A GIVEN

FUNCTION OR ADDRESSING AN ISSUE, A MINIMUM DATA SET IS NEEDED.

QUITE OFTEN SUCH MANAGEMENT INFORMATION SYSTEMS ARE DESIGNED TO MEET HISTORICAL NEEDS WITH LITTLE CONCERN ABOUT THE ISSUES TO BE FACED IN THE FUTURE. CONSEQUENTLY, MANY TIMES SUCH SYSTEMS DO NOT CONTAIN THE INFORMATION NECESSARY TO ADEQUATELY ADDRESS NEW ISSUES AS THEY ARISE. AS A RESULT SUCH INFORMATION SYSTEMS ARE OFTEN VIEWED UNFAVORABLY BY THE USERS. WE FIND TIME AND AGAIN THAT WE HAVE THE RIGHT INFORMATION TO ADDRESS ISSUES THAT WERE RELEVANT FIVE YEARS AGO. BUT, WE DO NOT HAVE THE DATA THAT WE NEED TO ADDRESS THE ISSUES OF TODAY. IN ILLINOIS FOR EXAMPLE, WE HAVE SIGNIFICANT DATA ON TOTAL SPACE AVAILABLE--THE RESULT OF ADDRESSING THE ISSUE OF ENROLLMENT INCREASES DURING THE SIXTIES. BUT, WE DO NOT HAVE DATA ON THE PROGRAM SUITABILITY OF THE SPACE--A NECESSARY INGREDIENT TO CONFRONT THE ISSUE OF INCREASING PROGRAM SPECIALIZATION DURING THE SEVENTIES.

THUS, IT IS NECESSARY TO BECOME INVOLVED IN TRYING TO DETERMINE WHAT THE DIRECTIONS OF HIGHER EDUCATION WILL BE <u>BEFORE</u> DESIGNING THE INFORMATION SYSTEM.

IN THIS REGARD, THE BOARD OF HIGHER EDUCATION IS FORTUNATE IN

HAVING JUST COMPLETED TWO YEARS OF WORK DEVELOPING A MASTER PLAN. THIS PLAN ESTABLISHES CERTAIN DIRECTIONS WHICH CAN BE ANTICIPATED IN THE NEXT FIVE TO TEN YEARS. EVEN WITH SUCH DIRECTIONS, IT IS UNDERSTOOD THAT THE PLAN MUST BE CONTINUALLY UPDATED TO REFLECT CHANGES EXPERIENCED IN THE OPERATIONAL ENVIRONMENT. THE PLAN, WHILE STILL TENTATIVE, CAN BE EXAMINED FOR ISSUES AND DIRECTIONS WHICH THE PROPOSED INFORMATION SYSTEM MUST BE ABLE TO ADDRESS. SOME OF THESE ISSUES HAVE CURRENCY IN OTHER STATES. AS A MATTER OF CONVENIENCE OF PRESENTATION, THESE ISSUES HAVE BEEN ORGANIZED IN MY REMARKS HERE UNDER SOME OF THE AREAS OF RESPONSIBILITY FOR STATE HIGHER EDUCATION PLANNING AGENCIES AS IDENTIFIED IN THE SLIB PROJECT.

LET ME DEVELOP SOME OF THESE ISSUES, AND INDICATE SOME OF THE DATA ELEMENTS NEEDED TO RELATE TO THEM.

ENROLLMENT PLANNING

ENROLLMENTS IN ILLINOIS PUBLIC AND PRIVATE COLLEGES AND UNIVERSITIES ARE PROJECTED TO INCREASE STEADILY THROUGH THE EARLY 1980s, AND THEN DECLINE THROUGH 1990 TO LEVELS COMPARABLE TO 1975 ENROLLMENTS. SEVERAL ISSUES ARE APPARENT. FIRST, WE MUST BE CAUTIOUS IN

INCREASING FACULTY AND STAFF, AND CONSTRUCTING NEW FACILITIES, THAT MAY BE UNDERUTILIZED IN THE 1980s. CONSEQUENTLY, WE REQUIRE GOOD DATA CONCERNING FACULTY LOAD AND THE CURRENT UTILIZATION OF FACILITIES.

WE NEED TO CONTINUE TO REASSESS OUR ENROLLMENT PROJECTIONS TO DETECT ANY TRENDS WHICH COULD INFLUENCE ORIGINAL CONCLUSIONS. SPECIAL ATTENTION SHOULD BE GIVEN TO ENROLLMENT DEVELOPMENTS AMONG THAT SEGMENT OF THE SOCIETY OVER 25 YEARS OF AGE SINCE THIS IS THE AREA IN WHICH CHANGES COULD IMPACT MOST ON PROJECTIONS AND ON RESOURCES. CONSEQUENTLY, WE NEED TO COLLECT ENROLLMENT DATA BY AGE AND BY STUDENT LOAD.

DESPITE PROJECTED ENROLLMENT GROWTH, RELATIVE STABILIZATION CAN BE EXPECTED AT UNIVERSITIES. THE ENROLLMENT GROWTH IS ANTICIPATED TO BE MAINLY IN GENERAL STUDIES AND VOCATIONAL/TECHNICAL PROGRAMS. AND OF COURSE COMMUNITY COLLEGES WILL BENEFIT MOST. AS A RESULT, IT IS ANTICIPATED THAT UNIVERSITIES WILL INCREASE THEIR OFF-CAMPUS ACTIVITIES. TO PLAN FOR THIS DEVELOPMENT IN A MANNER THAT BEST UTILIZES RESOURCES, A COMPREHENSIVE PROGRAM INVENTORY IS NEEDED. FURTHER, AS ENROLLMENTS DECREASE AT UNIVERSITIES, COMPETITION FOR OFF-CAMPUS

STUDENTS CAN BE EXPECTED TO INCREASE. CONSEQUENTLY, WE NEED ENROLLMENT AND PROGRAM INFORMATION BY LOCATION.

WE NEED MORE SOPHISTICATED MANPOWER DATA TO ANTICIPATE PROGRAM DEMANDS AND WHERE POSSIBLE WE NEED TO RELATE THESE DEMANDS TO EXISTING PROGRAMS. WE NEED GOOD DATA ON TENURED FACULTY IF WE ARE TO PLAN THE REALLOCATION OF RESOURCES FROM PROGRAMS WITH DECREASING DEMAND TO THOSE WITH INCREASING DEMAND.

IF THERE IS SIGNIFICANT ENROLLMENT GROWTH IN COMMUNITY COLLEGES AS PROJECTED, WE NEED DATA ABOUT TRENDS REGARDING TRANSFER STUDENTS IF ARTICULATION IS TO BE ACCOMPLISHED AS IT INVOLVES THE PLANNING OF PROGRAMS AND ALLOCATION OF RESOURCES.

STUDENT ACCESS

THE BOARD OF HIGHER EDUCATION IS ADVOCATING THAT PUBLIC UNIVERSITY UNDERGRADUATE TUITION BE MAINTAINED AT ONE-THIRD OF INSTRUCTIONAL COSTS AND THAT THE STATE'S MAXIMUM MONETARY AWARD FOR STUDENT AID BE ESTABLISHED AT A LEVEL EQUAL TO 65 PERCENT OF WEIGHTED AVERAGE TUITION AT PRIVATE COLLEGES AND UNIVERSITIES.

THIS MEANS THERE MUST BE EFFORTS TO DEVELOP A COMPREHENSIVE DATA

BASE WHICH PROVIDES INFORMATION RELATING TO TOTAL STUDENT COST, TUITION AND FEES, AND FINANCIAL AID PROGRAMS IN ORDER TO MONITOR:

- CHANGES IN FEDERAL AND STATE FINANCIAL AID POLICIES AND THEIR POTENTIAL OR ACTUAL IMPACT ON ENROLLMENTS AND STUDENTS' ABILITY TO MEET COLLEGE COSTS.
- CHANGES IN THE UNMET STUDENT COST BETWEEN AND WITHIN THE PUBLIC AND PRIVATE SECTORS OF HIGHER EDUCATION.
- THE IMPACT OF TUITION INCREASES ON ENROLLMENTS AND RESULTING CHANGES IN THE DISTRIBUTION OF STUDENTS BY FAMILY INCOME.
- ALTERATIONS IN THE UNDUPLICATED HEADCOUNT OF FINANCIAL AID RECIPIENTS WITHIN AND AMONG THE VARIOUS SECTORS OF HIGHER EDUCATION.

WE NEED TO CONTINUALLY REASSESS OUR CRITERIA OF STUDENT FINANCIAL NEED.

AFFIRMATION ACTION IS AN EXAMPLE OF AN ISSUE NOT ANTICIPATED BY MANY DATA SYSTEMS. OBVIOUSLY, THERE WILL NEED TO BE DEVELOPED THESE DATA AS THEY REGARD ENROLLMENT, THE AWARDING OF STUDENT AID AND THE NEEDS OF COUNSELING AND RETENTION PROGRAMS.

FACULTY AND STAFF RESOURCES

ALSO WITH RESPECT TO AFFIRMATIVE ACTION, THERE WILL BE INCREASED

PRESSURE TO EQUALIZE OPPORTUNITY AMONG FACULTY AND STAFF MEMBERS DURING THE SEVENTIES. ONE WAY TO ACCOMPLISH THIS IS THROUGH THE FILLING OF VACANCIES. HOWEVER, TENURE AND AGE DISTRIBUTION DATA WOULD INDICATE THAT ANTICIPATED TURNOVER, AT LEAST AMONG FACULTY MEMBERS, CAN BE EXPECTED TO BE LOW DURING THE SEVENTIES. THE BEST WE MAY BE ABLE TO DO IS EQUALIZE THE REWARD STRUCTURE. CONSEQUENTLY, DATA SYSTEMS NOT ONLY NEED TO CLASSIFY EMPLOYEES BUT ALSO PROVIDE INFORMATION ABOUT EQUITY WITHIN THE REWARD STRUCTURE. DATA ON TENURE, PROGRAM, DEGREE EARNED, LENGTH OF SERVICE, AND RANK WILL ALL BE NEEDED.

WITH REGARD TO NONPROFESSIONAL EMPLOYEES, WE NEED DATA COMPARING SALARY AND EMPLOYMENT CONDITIONS WITH COMPARABLE POSITIONS ELSEWHERE IN STATE GOVERNMENT.

PROGRAM PLANNING, REVIEW AND EVALUATION

WITH AN EXPECTATION OF LIMITED RESOURCES IN THE FUTURE IN ILLINOIS, THERE MUST BE A VIGOROUS REVIEW OF REQUESTS FOR NEW UNITS OF INSTRUCTION, RESEARCH AND PUBLIC SERVICE. DATA NECESSARY FOR REVIEWING SUCH REQUESTS RELATE TO MANPOWER NEEDS, COSTS OF COMPARABLE PROGRAM, AND AN INVENTORY OF EXISTING PROGRAMS AT PUBLIC AND PRIVATE INSTITUTIONS.

THERE MUST BE A CONTINUOUS REVIEW OF EXISTING PROGRAMS IF REALLOCATION IS TO BE AN ONGOING ACTIVITY, AS WE THINK IT MUST. SUCH A REVIEW PRESUMES DATA ABOUT UNIT COSTS AND FACULTY LOAD.

IN ILLINOIS, THERE CLEARLY WILL BE CONTINUED DEVELOPMENT OF NONTRADITIONAL PROGRAMS. IF SUCH DEVELOPMENT IS TO BE MANAGEABLE FINANCIALLY, THEN DATA ARE REQUIRED ABOUT COSTS AND BENEFITS ESPECIALLY REGARDING EDUCATION/INSTRUCTIONAL TELEVISION. IS ETV A SUPPLEMENT, A COMPLEMENT, OR A REPLACEMENT FOR TRADITIONAL INSTRUCTION? THE ANSWER TO THIS QUESTION SETS FUNDING DIRECTIONS AND ESTABLISHES DATA REQUIREMENTS.

PUBLIC SERVICE PROGRAMS AND ACTIVITIES HAVE EXPANDED IN RECENT YEARS TO THE POINT AT WHICH COMPREHENSIVE INFORMATION IS REQUIRED IF THERE IS TO BE REASONABLY EFFECTIVE COORDINATION IN THIS AREA. CLEARLY, IF ENROLLMENT DECLINES AT PUBLIC UNIVERSITIES, THIS ACTIVITY WILL BE AN OUTLET FOR UNDERUTILIZED FACULTY RESOURCES. DATA SYSTEMS NOT NOW IN EXISTENCE IN ILLINOIS WILL NEED TO BE DESIGNED TO MEASURE THE IMPACT OF THIS ACTIVITY.

THE INCREASED ENROLLMENT PROJECTED FOR VOCATIONAL COURSES, AND

THE MULTIPLICITY OF FUNDING SOURCES, REQUIRE DATA FOR THE PURPOSES OF COORDINATION AND PLANNING. RESOURCE CONSIDERATIONS MAY FORCE A GREATER COOPERATION BETWEEN TRADITIONAL HIGHER EDUCATION INSTITUTIONS AND PROPRIETARY INSTITUTIONS. HISTORICALLY, LITTLE DATA HAVE BEEN COLLECTED FROM PROPRIETARY INSTITUTIONS, BUT DESIGNERS OF DATA SYSTEMS MUST NOW BE AWARE OF THE COOPERATION POSSIBILITIES.

A DATA BASE NEEDS TO BE ATTUNED TO THE ISSUE OF PROGRAM SPECIALIZATION, WHICH IS OFTEN CHARACTERIZED AS NOT REQUIRING MUCH ADDITIONAL FINANCIAL SUPPORT BUT WHICH IN REALITY MAY INCREASE UNIT COSTS.

OPERATIONAL FUNDING

IF POSTSECONDARY EDUCATION IS TO SECURE RESOURCES FOR NEEDED PROGRAMS AND SERVICES OVER THE NEXT DECADE, IT MUST ACHIEVE A BROAD RANGE OF PLANNING AND MANAGEMENT OBJECTIVES--INCREASED PRODUCTIVITY, REALLOCATION OF RESOURCES, A REDUCTION OF STATE SUBSIDIES TO AUXILIARY SERVICES, INCREASED USER FEES FOR PUBLIC SERVICE PROGRAMS, INCREASED TUITION AND INCREASED TAX SUPPORT. A DATA SYSTEM MUST BE CONSTRUCTED WHICH MONITORS AND MEASURES THE PROGRESS IN ACHIEVING THESE OBJECTIVES.

AS MENTIONED, THE GREATEST ENROLLMENT GROWTH SECTOR, REPRESENTS

THE PUBLIC COMMUNITY COLLEGES. HOW DO YOU PROVIDE INCENTIVES FOR EFFECTIVE RESOURCE UTILIZATIONS ON A FORMULA FUNDED BASIS? WE HAVE DEVELOPED A FUNDING PLAN WHICH SHOULD ACHIEVE THIS GOAL. IT NECESSITATES THAT THE FUTURE INFORMATION SYSTEM PROVIDE ACCURATE DATA ABOUT PROGRAM COSTS AND ENROLLMENTS BY PROGRAM CATEGORY.

IN THE SAME VEIN, ONE GOAL OF STATE SUPPORT IS PRESERVATION OF THE HEALTH OF THE PRIVATE SECTOR. A DATA BASE MUST REVEAL THE IMPACT OF AID PROGRAMS ON PRIVATE COLLEGES BASED ON A VARIETY OF CRITERIA ESTABLISHED TO MEASURE QUALITY AND ECONOMIC VITALITY.

FACILITIES, SPACE, CAPITAL PLANNING

BECAUSE OF PROJECTED ENROLLMENT DECREASES IN THE 1980s, AND CURRENT STUDIES INDICATING A LOW UTILIZATION OF EXISTING CLASSROOM AND LABORATORY SPACE AT PUBLIC INSTITUTIONS, PRIORITIES IN THE FUTURE WILL INCLUDE: REMODELING, NEW CONSTRUCTION ON THE BASIS OF EXISTING ENROLLMENTS AND BETTER UTILIZATION OF EXISTING FACILITIES. THESE PRIORITIES, AND THE ONGOING NEED FOR SPACE SURVEYS AND ANALYSIS, SUGGEST SEVERAL ELEMENTS OF A DATA BASE. CLEARLY, PROGRAM SUITABILITY DATA MUST BE MAINTAINED. CONDITION OF FACILITIES IS A NECESSARY ELEMENT.

PERHAPS A FORMULA WILL BE REQUIRED TO ALLOCATE RESOURCES FOR REMODELING. THE ELEMENTS OF THIS FORMULA WILL NEED TO BE MAINTAINED IN THE INFORMATION SYSTEM.

FINALLY, THERE ARE MANY STATEWIDE SUPPORT PROGRAM DEVELOPMENTS IN COMPUTING, EDUCATIONAL TELEVISION, HEALTH EDUCATION, LIBRARY MATERIALS, AUDIO-VISUAL EQUIPMENT, AND OTHERS WHICH WILL CUT ACROSS INSTITUTIONAL LINES AND NECESSITATE INFORMATION ABOUT PROGRAMS AND FACILITIES OF INSTITUTIONS OTHER THAN THOSE OF AN EDUCATIONAL NATURE.

CLEARLY, THESE ISSUES ARE IMPORTANT IN DESIGNING AN INFORMATION SYSTEM THAT MEETS THE FUTURE ANALYTICAL NEEDS OF A STATE BOARD OF HIGHER EDUCATION. THERE ARE ALSO ROUTINE NEEDS THAT THE INFORMATION SYSTEM MUST ALSO ADDRESS--BUDGET PREPARATION, PROGRAM APPROVAL, APPROVAL OF LINE ITEM TRANSFER, REPORTS OF INSTITUTIONAL DATA AND CHARACTERISTICS. THUS, ONE CONDITION OF A SUCCESSFUL INFORMATION SYSTEM IS THAT IT BE INTEGRATED INTO THE OPERATIONS OF THE AGENCY. THE MORE OPERATIONS THAT CAN BE PLANNED FOR ON A SCHEDULED BASIS, THE BETTER AN AGENCY WILL OPERATE. CONVERSELY, UNPLANNED OPERATIONS CAUSE AN AGENCY TO OPERATE IN THE REACTIVE, CRISIS MODE.

THIS IS THE REASON THE BOARD OF HIGHER EDUCATION, AFTER OPERATING FOR YEARS WITH THE COST STUDY GENERATING BUDGETS, DEVELOPED A STRUCTURE AND SCHEDULE FOR THE PROCESS OF BUDGET RECOMMENDATION AND PROGRAM APPROVAL. THIS WAS ACCOMPLISHED BY BEGINNING WITH THE STATUTE TO DETERMINE THE REQUIREMENTS ON THE BOARD AND BY OBSERVING WHAT PROCESSES WERE ACTUALLY TAKING PLACE.

OUT OF THIS GREW THE RESOURCE ALLOCATION AND MANAGEMENT PROGRAM WHICH ADDRESSES NOT ONLY OPERATIONS BUT ALSO ISSUES. THUS, RAMP IS A LARGE PART OF THE AGENCY'S INFORMATION SYSTEM AND IS COINCIDENT WITH THE REQUIRED BUDGETARY RECOMMENDATION AND PROGRAM APPROVAL OPERATIONS OF THE SYSTEM. ANY COMPUTERIZATION OF RAMP IS DONE TO IMPROVE INSTITUTIONAL RESPONSE AND/OR AGENCY ANALYSES OF THE DATA PROVIDED. AND SO AGAIN, EVEN <u>THROUGH</u> OPERATIONAL SYSTEMS WE RETURN TO ANALYSIS AND ITS IMPACT ON THE INFORMATION SYSTEM.

AND THE KEY TO ANALYSIS FROM THE AGENCY'S VIEWPOINT IS "FLEXIBILITY." CLEARLY, WE CANNOT IDENTIFY ALL THE ISSUES FOR THE NEXT TEN YEARS. AND EVEN IF WE COULD, WE PROBABLY COULDN'T IDENTIFY ALL THE COMBINATIONS OF DATA THAT WILL BE REQUIRED TO ADDRESS THESE ISSUES. NEW ISSUES ARISE,

NEW STAFF MEMBERS ARRIVE, AND NEW STATE "CRISES" DEVELOP, ALL OF WHICH GENERATE DEMANDS FOR DATA AND DATA COMBINATIONS WHICH CANNOT BE ANTICIPATED.

DOES THIS MEAN THAT EFFECTIVE INFORMATION SYSTEMS CANNOT BE DESIGNED? CLEARLY NOT. BUT IT DOES MEAN THAT A GREAT DEAL OF ATTENTION MUST GO INTO THE STRUCTURAL DESIGN OF SUCH SYSTEMS. THE AUTOMATED INFORMATION SYSTEM MUST BE DESIGNED SO THAT ONE TIME REQUESTS FOR INFORMATION CAN BE ANSWERED WITH A MINIMUM OF EFFORT. DATA ITEMS FROM DIFFERENT FILES MUST BE EASILY INTER-RELATED. AND ATTENTION SHOULD BE PAID TO WHERE THE DATA ARE KEPT.

THERE IS THE PROBLEM OF COST. THE COST OF ANNUALLY COLLECTING AND STORING ALL THE DATA TO ADDRESS JUST THE ISSUES THAT I HAVE DEVELOPED TODAY MAY BE PROHIBITIVE. NOT PROHIBITIVE FROM THE SENSE OF PURE DOLLARS AND CENTS BUT PROHIBITIVE FROM THE POINT OF VIEW OF LEGISLATIVE AND INSTITUTIONAL GOODWILL. SUCH COSTS WOULD CLEARLY BE A LARGE PERCENTAGE INCREASE IN THE AGENCY'S BUDGET. THIS WOULD DRAW LEGISLATIVE ATTENTION AND QUESTIONS OF HOW WE HAVE BEEN ABLE TO DO SUCH AN ADMIRABLE JOB IN THE PAST WITHOUT THE USE OF AN INFORMATION

SYSTEM.

FROM AN INSTITUTIONAL VIEWPOINT, QUESTIONS WOULD BE RAISED ABOUT THE USE OF ALL THE DATA COLLECTED. SUCH PROBLEMATICAL QUESTIONS CAN NOT BE FULLY ANSWERED, FOR ONCE THAT DATA ARE IN THE DATA BASE, IT MAY BE USED FOR MANY DECISIONS WHICH WERE NOT ANTICIPATED WHEN THE DATA WERE REQUESTED. AND, AN INSTITUTION MAY HAVE A LEGITIMATE CONCERN THAT THE PARTICULAR DATA COMBINATION USED MAY NOT ADEQUATELY ADDRESS THE ISSUE UNDER CONSIDERATION.

ON THE OTHER HAND, MUCH OF THE DATA REQUIRED TO ADDRESS POLICY ISSUES MAY ALREADY EXIST AT INSTITUTIONS. CONSEQUENTLY, AN ALTERNATE TO COLLECTING AND MAINTAINING EVERYTHING AT THE STATE AGENCY LEVEL IS TO DESIGN A SYSTEM WHICH RETRIEVES THIS INFORMATION WHEN IT IS NEEDED.

THE SUCCESSFUL DESIGNERS OF THE INFORMATION SYSTEM SHOULD BE COGNIZANT OF WHAT IS AVAILABLE AND DESIGN THE SYSTEM SO THAT IT CAN USE THE AVAILABILITY OF THESE DATA TO ADVANTAGE. IN OTHER WORDS, AN INSTITUTION'S EFFORT IS MINIMIZED IF EXISTING INSTITUTIONAL DATA ELEMENTS CAN BE SELECTED, WHERE POSSIBLE, FOR RETRIEVAL OR AGGREGATION TO THE STATE LEVEL INFORMATION SYSTEM. THE DATA COLLECTED MUST BE

COMPARABLE AND SOMETIMES EXISTING INSTITUTIONAL SYSTEMS DO NOT SATISFY THIS REQUIREMENT. THEN, IT IS NECESSARY FOR THE STATE LEVEL INFORMATION SYSTEM TO SUPPLY CLEAR UNDERSTANDABLE DEFINITIONS AND PROCEDURES WHICH ALL INSTITUTIONS CAN FOLLOW WHEN SUBMITTING THE DATA TO THE SYSTEM.

IF THIS APPROACH IS TAKEN, IT WILL REQUIRE THAT SOME DATA BE ROUTINELY COLLECTED SO THAT OPERATIONAL SYSTEMS AT THE STATE LEVEL CAN BE BETTER PERFORMED. IT WILL REQUIRE AN INSTITUTIONAL COMMITMENT TO THE MAINTENANCE OF DATA THAT MAY BE NEEDED ON A ONE TIME REQUEST BASIS. AND, IT WILL REQUIRE INCISIVE ANALYSIS TO DETERMINE WHAT INSTITUTIONAL DATA ARE REQUIRED TO PROPERLY ADDRESS FUTURE ISSUES.

A CONGLOMERATION OF INFORMATION WILL NOT INFLUENCE PEOPLE TO TAKE THE APPROPRIATE POLICY DIRECTIONS. DATA NEED INTERPRETATION FOR THE ISSUE BEING DISCUSSED. THIS REQUIRES GOOD STAFF TO PERFORM PROPER ANALYSES AND INTERPRETATION OF THE ANALYSES. TWO CONSIDERATIONS ARE IMPORTANT. FIRST, AN UNDERSTANDING THAT THE DATA WILL BE COLLECTED ACCORDING TO AGREED UPON DEFINITIONS AND PROCEDURES SO THAT ADVERSARIES CANNOT ARGUE THAT "THE DATA ARE BAD" BUT INSTEAD ARE FORCED TO DISCUSS

THE MERITS OF THE ANALYSIS. AND SECOND, AN EFFECTIVE SPOKESMAN WHO CAN WRITE AND/OR SPEAK OF THE RESULTS IN TERMS THAT THE POLICY MAKER CAN UNDERSTAND. IF THIS CAN BE ACHIEVED, INFORMATION SYSTEMS WILL PROVE THEIR ADVERTISED POTENTIAL IN AIDING HIGHER EDUCATION DECISIONS.

12/1/75